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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/806,027 | 03/26/2001 | Takahiro Shoji | L9289.01124 | 5006 |

7,590 02/27/2004
Stevens Davis Miller & Mosher
1615 L Street NW Suite 850
Washington, DC 20036

EXAMINER

CORSARO, NICK

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| ART UNIT | PAPER NUMBER |
|----------|--------------|

2684

DATE MAILED: 02/27/2004

5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/806,027

Applicant(s)

SHOJI ET AL.

Examiner

Nick Corsaro

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 03/26/2001.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: "APPARATUS AND METHOD FOR RADIO COMMUNICATIONS QUALITY BASED ON POWER CONTROL AND DATA RATE CONTROL".

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agrawal et al. (5,722,051) in view of Walton et al. (5,621,723).

Consider claims 1, 8, and 10 Agrawal discloses a radio communication apparatus (see col. 3 lines 50-58). Agrawal discloses a transmit power determiner for determining a transmit power value that will not interfere with communications between other stations based on a transmit power value obtained from the communications between the other stations (see col. 1 lines 15-67, col. 3 lines 65-67, col. 4 lines 1-2, col. 1 lines 15-26, col. 4 lines 46-65, and col. 5 lines 16-35). Agrawal discloses an estimator for estimating propagation path loss of a communication channel based on propagation path loss information (see col. 1 lines 15-55, col. 5 lines 16-67, and col. 6 lines 1-24). Agrawal discloses a transmission coding determiner for

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determining a transmission coding value that will meet desired communication quality according to the determined transmit power value and the estimated propagation path loss (see col. 5 lines 15-67, col. 6 lines 1-67, and col. 7 lines 1-67).

Agrawal discloses that the receiver will determine a channel power and channel coding pair used by the transmitter, where the channel coding will determine the transmission rate (see col. 1 lines 27-67, col. 2 lines 25-67, col. 4 lines 38-65, and col. 5 lines 16-35). Agrawal however does not specifically disclose a transmission rate determiner for determining a transmission rate value that will meet desired communication quality. Walton teaches a transmission rate determiner for determining a transmission rate value that will meet desired communication quality (see col. 3 lines 17-40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Agrawal, and have a transmission rate determiner for determining a transmission rate value that will meet desired communication quality, as taught by Walton, thus allowing more reliable data rate alternatives when mobiles are peak power limited and cannot support reliable communications at higher data rates, as discussed by Walton (col. 2 lines 24-35).

Consider claims 2, 9, and 11, Agrawal discloses a radio communication apparatus (see col. 5 lines 16-20). Agrawal discloses a receiver for receiving a transmit power value and a transmission coding value determined by the other end of communication (see col. 4 lines 48-65 and col. 5 lines 15-35). Agrawal discloses a transmitter for transmitting user data with the transmit power value and the transmission coding value (see col. 4 lines 48-65, col. 5 lines 16-35, and col. 8 lines 7-65).

Agrawal discloses that the receiver will determine a channel power and channel coding pair used by the transmitter, where the channel coding will determine the transmission rate (see col. 1 lines 27-67, col. 2 lines 25-67, col. 4 lines 38-65, and col. 5 lines 16-35). Agrawal however does not specifically disclose a transmission rate determiner for determining a transmission rate value that will meet desired communication quality. Walton teaches a transmission rate determiner for determining a transmission rate value that will meet desired communication quality (see col. 3 lines 17-40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Agrawal, and have a transmission rate determiner for determining a transmission rate value that will meet desired communication quality, as taught by Walton, thus allowing more reliable data rate alternatives when mobiles are peak power limited and cannot support reliable communications at higher data rates, as discussed by Walton (col. 2 lines 24-35).

Consider claim 12, Agrawal discloses A radio communication method, wherein one radio communication apparatus determines a transmit power value that will not interfere with communications between other stations based on a transmit power value obtained from the communications between the other stations (see col. 1 lines 15-67, col. 3 lines 65-67, col. 4 lines 1-2, col. 1 lines 15-26, col. 4 lines 46-65, and col. 5 lines 16-3). Agrawal discloses estimates propagation path loss of a communication channel (see col. 1 lines 15-67, col. 3 lines 50-67, and col. 4 lines 12). Agrawal discloses determining a transmission coding value that will meet desired communication quality according to the determined transmit power value and the estimated propagation path loss (see col. 4 lines 37-67, and col. 5 lines 15-35). Agrawal

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discloses sending the determined transmit power value and the determined transmission code value as a control signal and sends user data with the determined transmit power value and the determined transmission code value, and the other radio communication apparatus sends user data with the transmit power value and the transmission code value sent from the one radio communication apparatus (see col. 5 lines 15-67, col. 6 lines 1-67, and col. 8 lines 7-65).

Agrawal discloses that the receiver will determine a channel power and channel coding pair used by the transmitter, where the channel coding will determine the transmission rate (see col. 1 lines 27-67, col. 2 lines 25-67, col. 4 lines 38-65, and col. 5 lines 16-35). Agrawal however does not specifically disclose determining a transmission rate value. Walton teaches determining a transmission rate value (see col. 3 lines 17-40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Agrawal, and determine a transmission rate value, as taught by Walton, thus allowing more reliable data rate alternatives when mobiles are peak power limited and cannot support reliable communications at higher data rates, as discussed by Walton (col. 2 lines 24-35).

Consider claims 3, Agrawal discloses the estimator estimates the propagation path loss, as the propagation path loss information, using a value indicating the reception quality of a known reference signal sent back from the other end of communication in response to the known reference signal transmitted from the radio communication apparatus (see col. 1 lines 15-67, col. 2 lines 1-67, col. 4 lines 38-67 and col. 5 lines 15-55).

Consider claim 5, Agrawal discloses the estimator estimates the propagation path loss based on the propagation path loss information acquired a plurality of times during a predetermined time (see col. 5 lines 15-35).

Consider claims 4, 6, 7, and 13, Agrawal discloses the system as modified above, by Walton, with tabular values such that propagation path loss and the system environment are measures and the values are transverse between the system components (figure 2), (see col. 2 lines 25-67, col. 4 lines 38-67, and col. 5 lines 15-67).

Agrawal discloses that the receiver will determine a channel power and channel coding pair used by the transmitter, where the channel coding will determine the transmission rate (see col. 1 lines 27-67, col. 2 lines 25-67, col. 4 lines 38-65, and col. 5 lines 16-35). Agrawal however does not specifically disclose a transmission rate. Walton teaches a transmission rate (see col. 3 lines 17-40).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Agrawal, and have a transmission rate, as taught by Walton, thus allowing more reliable data rate alternatives when mobiles are peak power limited and cannot support reliable communications at higher data rates, as discussed by Walton (col. 2 lines 24-35).

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(5,812,938), Gilhousen discloses a power data rate combination of power control.

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4. Any inquiry concerning this communication should be directed to Nick Corsaro at telephone number (703) 306-5616.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung, can be reached at (703) 308-7745. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Or faxed to:

(703) 872-9314 (for Technology center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth, Floor (Receptionist). Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 customer Service Office whose telephone number is (703) 306-0377.



Nick Corsaro

Primary Examiner